What is claimed is:

1. An isolated replication competent infectious Jaagsiekte sheep retrovirus (JSRV).

2. The isolated retrovirus of claim 1, wherein the retrovirus comprises:
a JSRV GAG protein;
a JSRV POL protein;
a JSRV ENV protein;
a JSRV genome comprising Long-Terminal Repeat (LTR) sequences at the 5' and 3' end of the retroviral genome, wherein the LTR is active in pulmonary epithelial cells,
a polynucleotide sequence encoding JSRV GAG protein, JSRV POL protein, and JSRV ENV protein; and
cis-acting nucleic acid sequences necessary for reverse transcription, packaging and integration in a target cell.

3. The isolated retrovirus of claim 1, having a genomic sequence as set forth in GenBank accession no. AF105220.

4. A recombinant replication competent Jaagsiekte sheep retrovirus (JSRV) comprising:
a JSRV GAG protein;
a JSRV POL protein;
a JSRV ENV protein;
a JSRV genome comprising Long-Terminal Repeat (LTR) sequences at the 5' and 3' end of the retroviral genome, wherein the LTR is active in pulmonary epithelial cells,
a heterologous nucleic acid sequence operably linked to a regulatory nucleic acid sequence; and
cis-acting nucleic acid sequences necessary for reverse transcription, packaging and integration in a target cell.

5. The retrovirus of claim 4, wherein the ENV protein further comprises a target-specific ligand sequence.

6. The retrovirus of claim 5, wherein the targeting specific ligand sequence is an antibody, receptor, or ligand.

7. The retrovirus of claim 5, wherein the target cell is a pulmonary cell.

8. The retrovirus of claim 5 wherein the target cell is a cell having a cell proliferative disorder.

9. The retrovirus of claim 8, wherein the cell proliferative disorder is selected from the group consisting of lung cancer, colon-rectum cancer, breast cancer, prostate cancer, urinary tract cancer, uterine cancer lymphoma, oral cancer, pancreatic cancer, leukemia, melanoma, stomach cancer and ovarian cancer.

10. The retrovirus of claim 5, wherein the heterologous polynucleotide sequence is a suicide gene.

11. The retrovirus of claim 10, wherein the suicide gene is a thymidine kinase.

12. The retrovirus of claim 5, wherein the heterologous sequence is a marker gene.

13. An isolated Jaagsiekte sheep retrovirus (JSRV) genome, comprising:
a polynucleotide as set forth in GenBank accession no. AF105220.

14. The isolated JSRV of claim 13 contained in an expression vector.

15. The isolated JSRV of claim 14, wherein the vector is a plasmid.

16. The isolated JSRV of claim 14, wherein the vector contains a regulatory sequence in operable association with JSRV genomic sequence.

17. The isolated JSRV of claim 16, wherein the regulatory sequence is a CMV early promoter sequence.

18. An isolated polynucleotide comprising the nucleic acid sequence as set forth in GenBank accession number AF105220, sequences complementary thereto and variants and fragments thereof.

19. The isolated polynucleotide sequence of claim 18, wherein T can be U and sequences complementary thereto.

20. An expression vector having in operable association the polynucleotide of claim 18.

21. A host cell transformed with the expression vector of claim 20.

22. A method for producing an infectious Jaagsiekte sheep retrovirus (JSRV), comprising:

transfecting a host cell with the vector of claim 20;

culturing the host cell under sufficient conditions and for sufficient time to allow expression of the plasmid to produce JSRV viral particles; and

obtaining the JSRV viral particles.

23. The method of claim 22, wherein the host cell is a pulmonary epithelial cell.

24. The method of claim 22, wherein the host cell is selected from the group consisting of a human 293T cell, a mtCCl-1 cell, and an MLE-15 cell.

25. A method of treating a subject having a cell proliferative disorder, comprising:
contacting the subject with a retroviral vector, comprising,
a JSRV GAG protein;
a JSRV POL protein;
a JSRV ENV protein;
a JSRV genome comprising Long-Terminal Repeat (LTR) sequences at the 5' and 3' end of the retroviral genome, wherein the LTR is active in pulmonary epithelial cells,
a heterologous nucleic acid sequence operably linked to a regulatory nucleic acid sequence; and
cis-acting nucleic acid sequences necessary for reverse transcription, packaging and integration in a target cell.

26. The method of claim 25, wherein the subject is a mammal.

27. The method of claim 26, wherein the mammal is a human.

28. The method of claim 25, wherein the contacting is by *in vivo* administration of the retrovirus.

29. The method of claim 28, wherein the *in vivo* administration is by systemic, local, or topical administration.

30. The method of claim 25, wherein the contacting is by *ex vivo* administration of the retrovirus.

31. The method of claim 25, wherein the ENV protein further comprises a target-specific ligand sequence.

32. The method of claim 31, wherein the targeting specific ligand sequence is an antibody, receptor, or ligand.

33. The method of claim 25, wherein the target cell is a cell having a cell proliferative disorder.

34. The method of claim 33, wherein the cell proliferative disorder is selected from the group consisting of lung cancer, colon-rectum cancer, breast cancer, prostate cancer, urinary tract cancer, uterine cancer lymphoma, oral cancer, pancreatic cancer, leukemia, melanoma, stomach cancer and ovarian cancer.

35. The method of claim 25, wherein the heterologous polynucleotide sequence is a suicide gene.

36. The method of claim 25, wherein the suicide gene is a thymidine kinase.

37. A pharmaceutical composition useful for inducing an immune response to Jaagsiekte sheep retrovirus (JSRV) in an subject comprising an immunogenically effective amount of a JSRV or JSRV polypeptide in a pharmaceutically acceptable carrier.

38. The pharmaceutical composition of claim 37, wherein the JSRV is a non-infectious JSRV.

39. The pharmaceutical composition of claim 37, wherein the JSRV is a heat inactivated JSRV.

40. The pharmaceutical composition of claim 37, wherein the JSRV polypeptide is an env polypeptide.

41. The pharmaceutical composition of claim 37, wherein the pharmaceutically acceptable carrier contains an adjuvant.

42. A method of inducing an immune response to a JSRV or JSRV polypeptide in a subject, comprising immunizing the animal with the composition of claim 37.

43. An antibody which specifically binds to the replication competent infectious Jaagsiekte sheep retrovirus (JSRV) of claim 1.

44. The antibody of claim 43, wherein the antibody is a monoclonal antibody.

45. A method for inhibiting the binding of a JSRV to a cell comprising contacting the JSRV with an anti- JSRV-antibody.

46. The method of claim 45, wherein the anti-JSRV antibody binds to a JSRV envelop protein.

47. The method of claim 45, wherein the contacting is *in vivo*.

48. The method of claim 45, wherein the contacting is *in vitro*.

49. The method of claim 45, wherein the antibody is formulated in a pharmaceutically acceptable carrier.

50. A method for identifying a compound which binds to a Jaagsiekte sheep retrovirus (JSRV) comprising:

a) incubating components comprising the compound and the JSRV under conditions sufficient to allow the components to interact; and

b) measuring the binding or effect of binding of the compound to the JSRV.

51. The method of claim 50, wherein the compound is a peptide.

52. The method of claim 50, wherein the compound is a peptidomimetic.

53. The method of claim 50, wherein measuring the ability of the compound to bind to the JSRV is by detection of a infectivity of the JSRV.

54. A method for inhibiting the expression of Jaagsiekte sheep retrovirus (JSRV) in a cell comprising contacting the cell with an inhibiting effective amount of an antisense oligonucleotide that binds to a segment of an mRNA transcribed from the JSRV genome whereby the binding of the antisense to the mRNA segment inhibits JSRV gene expression.

55. A recombinant retroviral vector, comprising:

a GAG protein;

a POL protein;

a ENV protein;

a polynucleotide sequence comprising jaagsiekte sheep retrovirus Long-Terminal Repeat (LTR) sequences at the 5' and 3' end of the polynucleotide sequence, wherein the LTR is active in pulmonary epithelial cells, a gag nucleic acid sequence, a pol nucleic acid sequence and an env nucleic acid sequence; and

cis-acting nucleic acid sequences necessary for reverse transcription, packaging and integration in a target cell.

56. The retroviral vector of claim 55, further comprising a heterologous sequence.

57. The retroviral vector of claim 55, wherein the gag, pol and env sequence are letiviral gag pol and env sequences.

58. The retroviral vector of claim 55, wherein the ENV protein is a JSRV ENV protein.

59. A method of driving lung-specific expression of a heterologous polynucleotide sequence comprising contacting a lung cell with a vector comprising a jaagsiekte sheep retrovirus long terminal repeat sequence (LTR) operably linked to the heterologous polynucleotide sequence.